

# Oversight News

Newsletter of the Commonwealth's environmental oversight of the Paducah Gaseous Diffusion Plant

## Scrap Piles Shrinking



**Tons of discarded metal have been removed from this scrap yard in the northwest corner of the Paducah Gaseous Diffusion Plant.** *Photo by Gaye Brewer, Ky. Division of Waste Management*

An ongoing effort to rid the Paducah Gaseous Diffusion Plant (PGDP) of thousands of tons of scrap metal is transforming areas of the site's landscape.

Department of Energy (DOE) contractors have removed more than 7,000 tons of metal from scrap yards located in the northwest corner of the PGDP. Some metal surfaces have radiological and PCB contamination that has the potential to get washed

into surface runoff during rainfall. Before scrap removal began, a sedimentation basin was constructed to capture surface runoff.

Another 37,000 tons of scrap metal await removal. At the Aug. 19, 2004, meeting of the Citizens Advisory Board, Bill Murphie, manager of DOE's Paducah/Portsmouth Project Office, stated that the projected completion date for the removal is July 2006.

*Information provided by Gaye Brewer, Ky. Division of Waste Management, Hazardous Waste Branch*

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**Views of the same scrap yard four years ago.**

*Photos by Todd Hendricks, Ky. Division of Waste Management*



## On-Site Portion of North/South Ditch Restored

**T**he North/South Diversion Ditch (NSDD) remedial action has been completed ahead of schedule and below budget.

The action primarily involved Section 1, a half-mile stretch of ditch inside the Paducah Gaseous Diffusion Plant (PGDP) security fence. Before cleanup, this segment of the NSDD was overgrown and cordoned off with radiological postings. It has since been excavated, capped with two feet of clay and two feet of clean topsoil and reseeded. The postings are no longer needed.

Industrial discharges and storm water runoff flowed through the NSDD for decades, bringing the ditch soil in contact with various contaminants. Although these flows were rerouted as an early part of the restoration effort, the need to characterize ditch soils remained.

About 350,000 cubic feet of soil were removed from the NSDD. Upon completion of the work, the division and DOE sampled



**Section 1 of the North/South Diversion Ditch has been excavated, capped with clay and clean topsoil and reseeded.**

*Photo by Gaye Brewer, Ky. Division of Waste Management*

the ditch to ensure no soil above the specified cleanup levels remained. All DOE and division confirmation sample results indicated that cleanup objectives had been achieved, allowing DOE to proceed with capping and reseeded.

Regulators are currently working with DOE to develop a scope of work to address the off-site portion of the NSDD.

*By Jon Maybriar, Ky. Division of Waste Management, Hazardous Waste Branch*

## New Director Leads Division of Waste Management

R. Bruce Scott is the new director of the Kentucky Division of Waste Management. His first day was Sept. 1.

“My first few weeks on the job have been both demanding and rewarding,” he said. “I am excited about the opportunities and challenges that are ahead of the division. As we continue to work together to accomplish

the agency’s mission, I am confident that we will be successful.”

Bruce is a career state employee with 21 years’ service. He earned a bachelor of science degree in chemical engineering from the University of Kentucky in 1982 and the following year came to work for the Division for Water as a permit writer. Bruce has served the agency in various capacities, including the past ten years as manager of the Kentucky Pollutant Discharge Elimination System (KPDES) Branch in the Division of Water.

Anthony R. Hatton, assistant director, served as acting director until Bruce’s appointment.

*By Eva Smith-Carroll, Ky. Division of Waste Management*

## Permit to Manage Hazardous Waste Reissued

On Sept. 30, 2004, the Kentucky Division of Waste Management reissued the hazardous waste management permit for the Paducah Gaseous Diffusion Plant (PGDP) site. The permit is issued to the U.S. Department of Energy (DOE) and its prime contractor, Bechtel Jacobs LLC. It allows the PGDP to treat and store hazardous waste and requires post-closure care and maintenance of the C-404 hazardous waste landfill. The original permit was issued to DOE and Martin Marietta Energy Systems Inc. on Aug. 19, 1991, and had undergone 15 modifications.

The re-issued permit retains all applicable standards and conditions of the original permit, including modifications. In addition, the permit:

- Allows previously permitted hazardous waste treatment methods, adsorption and decanting, to be used in additional designated areas at the facility.
- Allows treatment of hazardous waste by macroencapsulation and compaction in designated areas in addition to previously permitted treatment processes.
- Adds 340 newly identified areas where wastes have been managed or areas of possible contamination. These areas are known as solid waste management units or areas of concern.
- Identifies 24 locations (identified by DOE as “DOE Material Storage Areas,” or DMSAs) where hazardous wastes were found to be stored in violation of the previous permit.
- Coordinates the corrective action cleanup schedule in the permit with the current cleanup schedule in the Federal Facility Agreement between DOE, the U.S. Environmental Protection Agency and Kentucky. The permit allows changes to interim

dates in the corrective action cleanup schedule to proceed as minor modifications to the permit.

- Includes definitions of terms related to cleanups conducted under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). These terms are used in the permit’s Schedule of Compliance, and their equivalence with Resource Conservation and Recovery Act (RCRA) terms are explained in the permit.

The re-issuance took effect on Oct. 31, 2004, and will expire on Oct. 31, 2014.

*By Lauren McDonald, Ky. Division of Waste Management, Hazardous Waste Branch*

## Residential Well Testing

The Kentucky Division of Waste Management accepts residential groundwater sampling requests from concerned citizens living near the Paducah Gaseous Diffusion Plant (PGDP). Groundwater samples are tested for the following contaminants known to be leaving the U.S. Department of Energy property boundary: trichloroethylene (TCE) and technetium-99. In addition, each water sample is analyzed for a long list of volatile organic compounds. Samples are taken by division staff and shipped directly to a laboratory in St. Louis that is not associated with DOE or the PGDP.

Please note: Test results obtained by the division are only good for determining environmental impacts. If you want to know if your water is safe to drink — free of bacteria and diseases — you should seek the services of a water testing/treatment company. The McCracken County Health Department no longer provides this testing service.

If you are a plant neighbor in the immediate vicinity of the PGDP and would like to have your well sampled, you can contact Brian Begley at the Kentucky Division of Waste Management to arrange it. The toll-free number is 1-888-323-6403 ext. 669. Residents whose wells are already being sampled by the division do not need to re-enroll in this service.

*By Brian Begley, Ky. Division of Waste Management, Hazardous Waste Branch*



## Site Prep Begins for Plant to Convert Depleted Uranium

The Department of Energy (DOE) has met Congress's deadline for breaking ground on a facility to convert spent uranium to a more stable chemical form.

DOE is responsible for more than 36,000 cylinders containing depleted uranium hexafluoride, or  $\text{DUF}_6$ , stored at the Paducah Gaseous Diffusion Plant (PGDP). The radioactive material is a byproduct of uranium enrichment at the plant since 1952. Laid end to end, the steel cylinders would stretch about 80 miles.

The cylinders are stored outdoors in gravel yards or on concrete pads. DOE stockpiled  $\text{DUF}_6$  in hopes it could be reused. Over time, 484,000 tons accumulated, and after decades of exposure to the weather, many cylinders showed signs of rust and corrosion.

In the 1990s, various state and federal oversight officials raised concerns about deterioration of the cylinders and potential environmental and safety risks associated with an accidental release. They called for improved storage and maintenance of the cylinders. In response, DOE began to plan for long-term  $\text{DUF}_6$  management.

Led by U.S. Sen. Mitch McConnell, Kentucky's congressional delegation pushed to enact legislation requiring the construction of conversion facilities at Paducah and at DOE's Portsmouth, Ohio, enrichment plant. DOE had to break ground by July 31.

The new facility will convert  $\text{DUF}_6$  to depleted uranium oxides and commercial-grade hydrofluoric acid. It will have a backup system to neutralize hydrofluoric acid to calcium fluoride, also a



**Contractors have been preparing the construction site since DOE broke ground on July 27. Photo by Gaye Brewer, Ky. Division of Waste Management**

potentially marketable product, if the acid is not sold. DOE expects to ship the uranium oxide to a facility licensed to dispose low-level radioactive waste.

The conversion facility will be located just south of the enrichment plant. Since the groundbreaking, about two dozen construction workers have been preparing the site. Their work includes removing old foundations of temporary buildings used during the construction of the PGDP and digging trenches for connections to its underground utilities. Workers have also excavated what will become a sedimentation pond to collect storm water runoff before discharging it to an existing outfall.

Foundations for the main conversion building, tank storage areas and other facilities have also been prepared. Structural construction is scheduled to begin in the spring of 2005 and estimated to take two years.

Conversion of Paducah's inventory of  $\text{DUF}_6$  is expected to take 25 years and create at least 150 operational jobs and 100 construction jobs.

*By Lauren McDonald, Ky. Division of Waste Management, Hazardous Waste Branch*

## C-400 Record of Decision under Review

The Department of Energy has submitted a draft record of decision (ROD) for an interim cleanup of volatile organic contaminants in a central area of the Paducah Gaseous Diffusion Plant. This document is currently under review by both the Kentucky Division of Waste Management and the U.S. Environmental Protection Agency. In its final form, the ROD will spell out plans for extracting pooled solvent — primarily trichloroethylene (TCE) — from underground areas near the plant's C-400 Cleaning Building. Once approved, the C-400 ROD will become a legally binding agreement between DOE, EPA and the state.

The ROD submission follows the public comment period on DOE's proposed remedial action plan for the C-400 area. The proposed plan identified electrical resistance heating as DOE's technology of choice for attacking contamination near the building. A version of that technology, six-phase heating, has been tested in the area with promising results.

A record of decision is essentially a blueprint to which all subsequent project documents must adhere. While it does not include every detail of what will take place, it does provide a concise description of the selected remedy. All RODs must clearly identify the remedial action goals of a project and address any substantive comments received during the public comment period on the proposed plan. A comparative analysis of alternatives presented in the proposed plan must also be included, as must justification of the need for a remedy.

Following approval of the C-400 ROD, remedial design and remedial action work plans will be submitted to state and federal regulators for review, comment and approval. Once these documents have been approved, the project will proceed to the field.

Previous newsletter articles detailing the proposed plan and the six-phase heating technology can be accessed on-line at [www.waste.ky.gov/programs/hw/PGDP+Oversight+News.htm](http://www.waste.ky.gov/programs/hw/PGDP+Oversight+News.htm) by clicking the links to the July 2004, January 2003, October 2002 and April 2002 issues.

*By Todd Mullins, Ky. Division of Waste Management, Hazardous Waste Branch*

## Changes in Department for Environmental Protection

Two new divisions have been established in the Kentucky Department for Environmental Protection.

The focus of the Division of Compliance Assistance is bringing businesses into compliance by combining non-regulatory training and technical assistance programs with recognition and incentive programs. Existing programs that have been moved into the division are the small business air quality program, along with the water treatment, water distribution, and wastewater treatment plant operators certification program. New programs under development are the Environmental Leadership Program and the addition of an ombudsman.

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### [www.waste.ky.gov/Programs/hw/PGDP+Section.htm](http://www.waste.ky.gov/Programs/hw/PGDP+Section.htm)

is the Web site for the Paducah Gaseous Diffusion Plant section of the Hazardous Waste Branch within the Kentucky Division of Waste Management. Visit this Web site for:

- breaking news,
- public notices,
- back issues of newsletters,
- links to Web sites about uranium, nuclear energy, groundwater research, the U.S. Department of Energy, the Paducah Citizens Advisory Board and more.



## Environmental and Public Protection Cabinet

Department for Environmental Protection

Division of Waste Management

Hazardous Waste Branch

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Frankfort, KY 40601

[www.waste.ky.gov/programs/hw/PGDP+Section.htm](http://www.waste.ky.gov/programs/hw/PGDP+Section.htm)

## Changes in Department for Environmental Protection

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The aim is increasing compliance rates by developing programs that assist the regulated community to better understand their environmental obligations.

The Division of Enforcement brings together activities previously performed by the enforcement branches of the divisions of Waste Management, Water and Air Quality. A primary goal of the Division of Enforcement will be to resolve enforcement cases in a professional, consistent and timely manner. Aaron Keatley is currently the acting director.

The main number for both divisions is (502) 564-2150.

**By Eva Smith-Carroll, Ky. Division of Waste Management**

**Kentucky Environmental Oversight News** is published quarterly by the Kentucky Department for Environmental Protection's Division of Waste Management. It features information regarding environmental cleanup activities at the Paducah Gaseous Diffusion Plant site and related topics.

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**This newsletter can be provided in alternate formats to anyone with a disability.** To request an alternate format, contact Lauren McDonald at the address and phone numbers listed above.

Hearing or speech impaired people can contact the agency by using the Kentucky Relay Service, a toll-free telecommunications device for the deaf (TDD). For voice to TDD, call 1-800-648-6057. TDD to voice: 1-800-646-6056.

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